

In the Claims

Please cancel claims 1-31, without prejudice, after adding newly presented claims 32-53 below.

1-31. (Canceled)

32. (Newly Presented) A Distributed Bragg Reflector (DBR), comprising:
two or more DBR mirror layers;
an insulting layer defining an aperture; and
an isolation implant region extending around, and spaced outwardly from, the perimeter of at least part of the aperture of the insulting layer and traversing through the insulting layer and at least some of the DBR mirror layers.

33. (Newly Presented) A Distributed Bragg Reflector (DBR) according to claim 32 wherein the insulting layer is interposed between selected DBR mirror layers.

34. (Newly Presented) A Distributed Bragg Reflector (DBR) according to claim 32 wherein the isolation implant region extends entirely around the perimeter of the aperture of the insulting layer.

35. (Newly Presented) A Distributed Bragg Reflector (DBR) according to claim 32 wherein the isolation implant region defines an aperture that is larger than the aperture of the insulting layer.

36. (Newly Presented) A Distributed Bragg Reflector (DBR) according to claim

35 wherein the aperture of the isolation implant region is substantially coaxial with the aperture of the insulating layer.

37. (Newly Presented) A Distributed Bragg Reflector (DBR) according to claim 32 wherein the isolation implant region is implanted with protons.

38. (Newly Presented) An optoelectronic device, comprising:
a first mirror;
a second mirror;
an active region situated between the first mirror and the second mirror;
an insulating layer positioned in or adjacent to the first mirror, the insulating layer defining an aperture; and
an isolation implant region extending around, and spaced outwardly from, at least part of the aperture of the insulating layer and traversing through the insulating layer and at least part of the first mirror.

39. (Newly Presented) An optoelectronic device according to claim 38 wherein the isolation implant region also traverses through the active region.

40. (Newly Presented) An optoelectronic device according to claim 39 wherein the isolation implant region traversed through the active region and at least partially into the second mirror.

41. (Newly Presented) An optoelectronic device according to claim 38 wherein the isolation implant region extends entirely around the perimeter of the aperture of the insulating layer.

42. (Newly Presented) An optoelectronic device according to claim 38 wherein the isolation implant region defines an aperture that is larger than the aperture of the insulating layer.

43. (Newly Presented) An optoelectronic device according to claim 42 wherein the aperture of the isolation implant region is substantially coaxial with the aperture of the insulating layer.

44. (Newly Presented) An optoelectronic device according to claim 38 wherein the isolation implant region is implanted with protons.

45. (Newly Presented) An optoelectronic device according to claim 38 wherein the optoelectronic device is a Vertical Cavity Surface Emitting Laser (VCSEL).

46. (Newly Presented) A method for forming an optoelectronic device, the method comprising the steps of:

providing a lower mirror;

providing an active region above the lower mirror;

providing an upper mirror above the active region;

providing an insulating layer in or adjacent to the upper mirror, the insulating layer

defining an aperture; and

providing an isolation implant in an implant region, wherein the implant region extends around, and is spaced outwardly from, at least part of the aperture of the insulating layer and traverses down through at least part of the upper mirror and through the insulating layer.

47. (Newly Presented) An optoelectronic device according to claim 46 wherein the isolation implant region traverses through the active region.

48. (Newly Presented) An optoelectronic device according to claim 47 wherein the isolation implant region traversed through the active region and at least partially into the lower mirror.

49. (Newly Presented) An optoelectronic device according to claim 46 wherein the isolation implant region extends entirely around the perimeter of the aperture of the insulating layer.

50. (Newly Presented) An optoelectronic device according to claim 46 wherein the isolation implant region defines an aperture that is larger than the aperture of the insulating layer.

51. (Newly Presented) An optoelectronic device according to claim 50 wherein the aperture of the isolation implant region is substantially coaxial with the aperture of the insulating layer.

52. (Newly Presented) An optoelectronic device according to claim 46 wherein the isolation implant region is implanted with protons.

53. (Newly Presented) An optoelectronic device according to claim 46 wherein the optoelectronic device is a Vertical Cavity Surface Emitting Laser (VCSEL).